



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/566,702

02/01/2006

Wilhelm Latz

2901653.3

8044

59554

7590

04/24/2008

Womble Carlyle Sandridge & Rice, PLLC

Attn: Patent Docketing 32nd Floor

P.O. Box 7037

Atlanta, GA 30357-0037

EXAMINER

MULLINS, BURTON S

ART UNIT

PAPER NUMBER

2834

MAIL DATE

DELIVERY MODE

04/24/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/566,702	<b>Applicant(s)</b> LATZ ET AL.	
	<b>Examiner</b> BURTON MULLINS	<b>Art Unit</b> 2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 6-16 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/06</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 01 February 2006 has been considered by the examiner.

### ***Drawings***

3. There are no drawings in the file even though Figs.1-2 are referred to on p.4 of the specification.

The drawings are further objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include a reference sign for the “base” (claim 1).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

4. The abstract of the disclosure does not commence on a separate sheet in accordance with 37 CFR 1.52(b)(4). A new abstract of the disclosure is required and must be presented on a separate sheet, apart from any other text. The sliding electrical contact part “base” lacks a reference number. Presumably this refers to the brush as a whole, i.e., “contact part” 6, shown in Fig. 1A of the PCT application.

***Response to Amendment***

5. The preliminary amendment submitted 01 February 2006 has been entered.

***Claim Objections***

6. Claim 1 is objected to because of the following informalities: Change “multi-layer” to --multi-layered--. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. Claims 13-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The scope of claims 13-16 are indefinite since it is not clear if in claim 13 the electric brush’s “at least one contact part of claim 1” includes only the contact part or more of the claim 1 limitations. Definite language such as --the sliding electrical brush contact part further comprising an electrical brush-- is suggested.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-3, 6-10 & 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani et al. (US 7,067,951) in view of Whiteheart (US 3,601,645). Otani teaches a sliding electrical contact part comprising a “base” [sic], i.e., brush 12 (Fig.2), containing carbon (graphite), copper and zinc (c.3:62-67; c.5:1-7) wherein said part is multi-layer[ed] (Fig.2), with at least one layer 16 composed of a material with a low electrical resistivity (addition of brass to layer 16 prevents resistance from increasing, c.4:45-46, i.e., resistance is low) and at least one layer 14 composed of a material with a higher electrical resistivity (resistance of brass-less layer 14 is not prevented from increasing, c.4:43-45, i.e., resistance is high), the material composing the layer 16 with a low electrical resistivity containing zinc based particles, whose size is less than 500  $\mu\text{m}$  (c.1:66-c.2:3; c.5:65-c.5:3).

Otani differs in that iron is not used in the brush layer 16 comprising zinc and low electrical resistivity layer 16, to which the lead 6 is connected.

Whiteheart teaches an electrical contact brush comprising two layers of compacted powders forming brush body 1 & metallic layer 2, with a flexible conductor 3 connected to metallic layer 2 (Figs.1&2). The body 1 may comprise copper, graphite and zinc (c.2:21-33) while the metallic layer 2 comprises copper or iron or a mixture thereof (c.2:3-5; c.2:69-72).

Art Unit: 2834

Use of iron in the metallic layer provides a strong electrical joint with the flexible conductor 3, with higher tensile strength than the brush body (c.1:3-33&45-60).

It would have been obvious to modify Otani and provide powdered iron per Whiteheart in the layer of low electrical resistivity since this would have provided a strong electrical joint with the conductor or lead, with higher tensile strength than the material of the brush body.

Regarding claims 2-3, the base containing carbon (i.e., graphite) represents at least 20 weight-% of the contact part (see Table I of Otani; c.2:25-30 of Whiteheart).

Regarding claim 6, Otani's particles in Example 8 have a mean diameter of 50  $\mu\text{m}$ . Whiteheart's iron particles are 100 mesh (c.2:71) which corresponds to 100  $\mu\text{m}$  size particles.

Regarding claim 7, Whiteheart's iron particles are pure iron and thus comprise 100% weight in iron, thus fulfilling the limitation.

Regarding claims 8-9, see Examples 1-2 of Otani & c.11:1-2, c.12:3-7.

Regarding claim 10, Otani teaches a metal-sulfide solid lubricant (c.4:11-12).

Regarding claims 13-16, as best understood, Otani and Whiteheart teach electric motor brushes.

10. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Otani and Whiteheart, further in view of Munday (US 1,807,794). Otani and Whiteheart substantially teach applicant's invention but do not teach a polishing product.

Munday teaches a carbon brush comprising a carbide polishing product such as carborundum (p.2:8-19) to true the commutator.

It would have been obvious to modify Otani and Whiteheart's brush and provide a carbide polishing product such as carborundum per Munday to true the commutator.

***Allowable Subject Matter***

11. Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach the claimed sliding electrical contact part wherein said part contains between 1 and 15 weight-% of iron based particles or between 3 and 10 weight-% of iron based particles. Whiteheart is silent regarding the weight of the iron powder used relative to the weight of the brush.

***Conclusion***

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BURTON MULLINS whose telephone number is (571)272-2029. The examiner can normally be reached on 9-5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571)272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/BURTON MULLINS/  
Primary Examiner, Art Unit 2834

bsm  
21 April 2008